

Exploratory Data Analysis of the Apple Quality Dataset

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GitHub Repository: [SomrajBharadwaj/Apple-Quality \(github.com\)](https://github.com/SomrajBharadwaj/Apple-Quality)

1. Introduction

In this report, I will perform an Explanatory Data Analysis (EDA) on Apple Quality sourced from Kaggle. This dataset contains information about various attributes of a set of fruits, providing insights into their characteristics. The dataset includes details such as fruit ID, size, weight, sweetness, crunchiness, juiciness, ripeness, acidity, and quality.

2. Dataset Overview

Let's start by loading the dataset and exploring its structure. This dataset contains information about various attributes of a set of fruits, providing insights into their characteristics. The dataset includes details such as fruit ID, size, weight, sweetness, crunchiness, juiciness, ripeness, acidity, and quality.

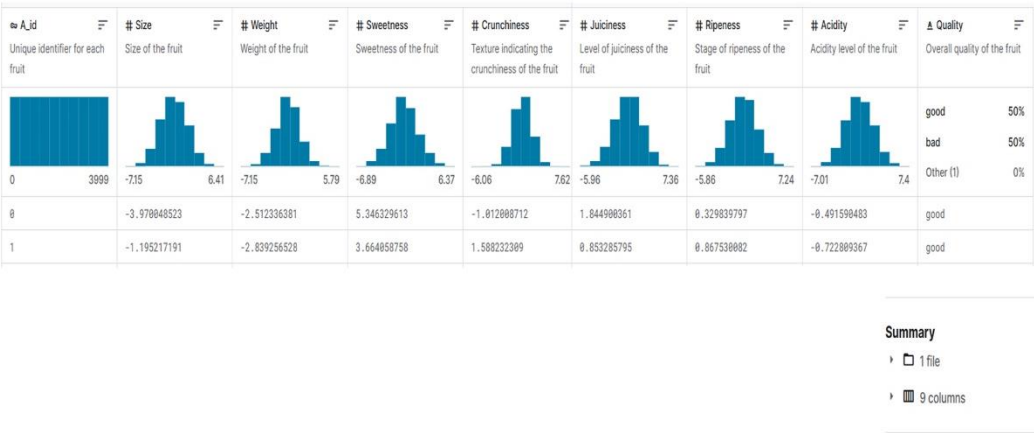


Fig 1: Overview of the Dataset

3. Exploratory Data Analysis:

Dataset Exploration:

I started the analysis by exploring the dataset. The dataset comprises eight numerical features and one categorical feature. The numerical features include fruit ID, size, weight, sweetness, crunchiness, juiciness, ripeness, and acidity while the categorical feature is the quality.

4. Visualization of Graphs:

Histogram:

I visualized the distribution of Apple Quality using the histogram. The distribution is about the Sweetness of apples from the dataset. A histogram is a visual representation of the distribution of numerical data. The x-axis displays the values in the dataset and the y-axis shows the count of each value. Depending on the values in the dataset, the histogram takes different shapes.

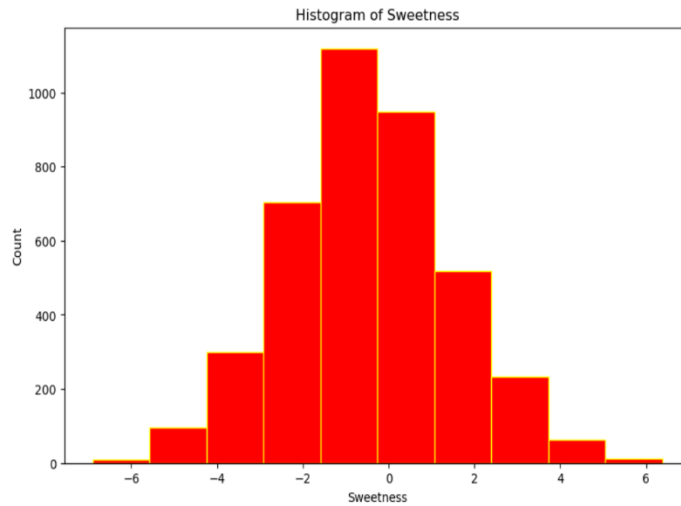


Fig 2: Histogram of Sweetness

Scatter Graph:

The goal of this scatter graph is to examine the relation between the size and weight of the apple. The variable “size” is taken on the x-axis and the “weight” on the y-axis. Each individual in the data appears as a point on the graph as shown in the figure below.

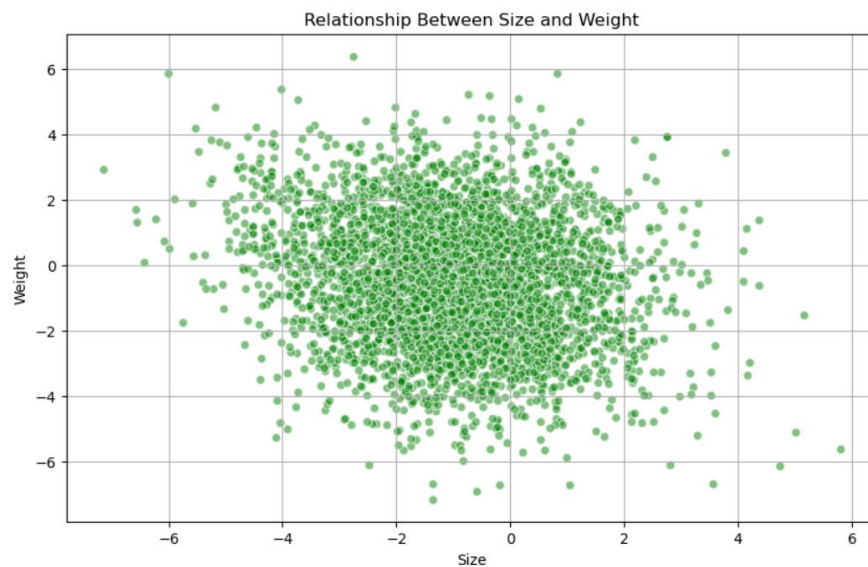


Fig 3: Scatter graph

Heatmap:

The objective of this report is to analyze the relation between various attributes of fruits, providing insights into their characteristics. By using the correlation between all the attributes of the fruits a correlation matrix is made. With the help of the correlation matrix heatmap is visualized. I aim to identify any patterns or discrepancies in the quality of apples using different attributes.

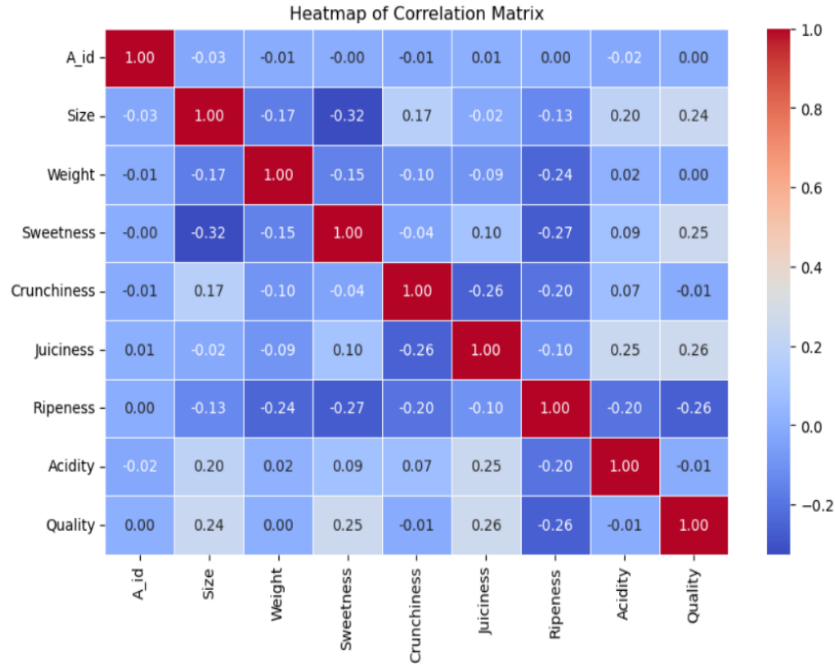


Fig 4: Heatmap

5. Conclusion

In this report, I loaded the dataset, exploded its structure, and computed summary statistics. Analyzing the dataset on Apple Quality provides valuable insights into the different relationships between attributes of Apple quality. Also, I visualized the sweetness of the fruit, compared the size and weight of the apple, and examined the correlation between the attributes of apple quality. The visualizations helped us understand patterns and distributions within the dataset, while descriptive statistics and correlation analysis quantified the relationships between numerical features. Further analysis could offer deeper insights into the dynamics of the quality of apples and their contributions to the health of an individual.